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ABSTRACT

Testing is a commonly used method of evaluating student achievement. In addition, results from testing are often intended to be useful as feedback to the student, helping him to identify his areas of achievement and deficiency. In a typical class, a test on a given unit is administered once at a time when it is believed most students should be prepared for it. Students are usually then ranked and graded according to their test performance relative to other students, or graded in accordance with some present standard. Repeatable testing is an alternative to the typical procedure. This approach makes use of several equivalent forms of each test, and students are permitted to attempt to improve their scores by taking tests on a given topic or area more than one time. This study was designed to explore the experiences of students and faculty who had used repeatable testing. Five faculty members and twenty students comprised the sample for the study. The general attitudes toward repeatable testing was favorable among both students and faculty who have had experience with it in their classes. Comments by students indicated that repeatable testing did relieve pressure and anxiety, and facilitated learning. The educational purposes of repeatable testing seem to be realized in courses using it. Since both faculty and students who have had actual experience with it prefer repeatable examinations to standard testing, it appears to achieve the purposes of both groups. (Author/PG)

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The Use of Repeatable Tests

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THE USE OF REPEATABLE TESTS

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INDIANA STUDIES IN PREDICTION NO. 24

Bureau of Educational Studies and Testing
Indiana University
Bloomington, Indiana
1973

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I

THE USE OF REPEATABLE TESTS

Testing is a commonly used method of evaluating student achievement. In addition, results from testing are often intended to be useful as feedback to the student, helping him to identify his areas of achievement and deficiency. In a typical class, a test on a given unit is administered once, at a time when it is believed most students should be prepared for it. Students are usually then ranked and graded according to their test performance relative to other students, or graded in accordance with some present standard.

Repeatable testing is an alternative to the typical procedure. This approach makes use of several equivalent forms of each test, and students are permitted to attempt to improve their scores by taking tests on a given topic or area more than one time.

Repeatable testing is designed in response to some of the criticisms of the single test approach. Among these criticisms are the likelihood of measuring speed of learning and of recall rather than mastery, the creating of unnecessary student anxiety, and the penalizing of students who misunderstand objectives and study inappropriate material. The use of repeatable testing is also intended to have some impact on recurring educational problems, such as underachievement, anxiety due to inadequate performance, and a poor attitude toward learning. If a student receives corrective

feedback regarding his initial test performance and is given an opportunity to maximize his final performance on a second attempt, it is believed that his anxiety will be reduced, his ultimate level of achievement raised, and his attitude toward the course improved. There is some evidence to support these contentions (Brookover, Shailer, and Paterson, 1964; Feather, 1966; Modu, 1969).

Despite the apparent advantages, however, repeatable testing is exploited by relatively few instructors at Indiana University. Why has this assessment procedure failed to catch on? This study was designed to explore the experiences of students and faculty who had used repeatable testing.

The Faculty Survey

Of the seven faculty who had recently used repeatable testing in their classes, five were on campus during the period of this survey. Those five comprised the faculty sample for the study.

The five faculty members were contacted and interviewed in person. The interviewer used a 12-item questionnaire and encouraged additional comments. Results from the interviews are reported in percentages for each response; faculty comments are reported at the end of the questionnaire results.

Faculty Interviews

	Percent of faculty who chose response
1. How many times could a student take a given examination?	
a. twice	0%
b. three times	40%
c. more than three, but not unlimited	20%
d. unlimited	0%
e. unlimited number of times within time limit	40%
2. About how many students took the exams more than once?	
a. less than 10%	0%
b. 10 to 30%	0%
c. 30 to 50%	20%
d. 50 to 70%	80%
e. more than 70%	0%
3. What percent of the students would you say took the exams more than twice?	
a. less than 10%	0%
b. 10 to 30%	40%
c. 30 to 50%	60%
d. 50 to 70%	0%
e. more than 70%	0%
4. In your opinion, who profited most from the use of repeatable examinations?	
a. bright students	0%
b. students who had poor backgrounds, regardless of ability	20%
c. students with less than average academic aptitude	40%
d. students who had less than adequate time to study	0%
e. almost all students	20%
f. no opinion	20%

	Percent of faculty who chose response
5. Did you find that management of the course with repeatable tests (record keeping, grading, etc.) was	
a. more difficult than usual courses	40%
b. about the same as usual courses	0%
c. less difficult than usual courses	20%
d. more difficult at first, less now	40%
6. How do you believe the more capable students liked repeatable testing?	
a. they preferred it to standard testing	60%
b. they probably have no preference for one method of testing over another	0%
c. they probably preferred usual methods of testing	40%
7. How do you believe the less capable students liked repeatable testing?	
a. they preferred it to standard testing	100%
b. they probably have no preference for one method of testing over another	0%
c. they probably preferred usual methods of testing	0%
8. How do you feel about the total knowledge students gained in your course with repeatable testing?	
a. they as a group gained more knowledge than in a typical course	80%
b. they gained about as much as in a typical course	20%
c. they probably gained less than in a typical course	0%
9. What was the most difficult part in carrying out a course with repeatable tests? (Check one only.)	
a. preparing the test items	60%
b. scheduling tests and keeping records	0%
c. justifying the procedure to students and colleagues	0%
d. training assistants and clerical	20%
e. no difficulty	20%

	Percent of faculty who chose response
10. How accurately do you believe repeatable tests assess student achievement?	
a. more accurately than your usual tests	80%
b. about the same as your typical tests	0%
c. less accurately than your typical tests	0%
d. more accurately at times, less accurately in long term	20%
11. Who made up the repeatable tests you have used?	
a. myself	20%
b. other faculty of the department	0%
c. combination of a & b	0%
d. combination of self, students, and faculty	80%
12. (If no longer used) Why did you stop using repeatable testing?	
a. clerical job too great	0%
b. educational benefit appeared to be negligible over standard testing	0%
c. students did not like the system	0%
d. students collect exams	20%

A sample of faculty comments reflects some ideas not tapped by the questionnaire. Here are some comments made by faculty who have used repeatable testing:

--Repeatable testing would be easier to use if there were adequate guidelines from the computing center for developing test items, and if more help could be obtained in this area. (Most professors reported comments along these lines.)

--My philosophy is to help students attain proficiency in the material in any possible way; the item pool is made available to the students before the test.

--The first administration of the test seems to yield the best assessment of item difficulty.

--Grade-oriented good students may resent giving others a chance to get good grades.

--Some students use the exams as practice; I do not object to that.

--Repeatable homework is incorporated in the course; it must be completed correctly and turned in before the test can be attempted.

The Student Survey

Student opinions about repeatable testing also appeared desirable for this study. As a first step in obtaining a student sample two courses utilizing repeatable tests were selected. In order to determine whether differences existed between attitudes and experiences of students who apparently succeeded in the courses and those who did not, two groups were identified. One group was made up of students who had received a final grade of A in the course; five such students were selected from each of the two courses. The second group was also made up of five students from each course. In one course the five had received final grades of C, the lowest grade given. In the other, the five students had received a grade of I, the only grade other than A given in that course. Thus the student sample contained 20 students, 10 apparently successful in the course using repeatable tests, 10 not so successful.

Telephone interviews were conducted with students sampled; seven questions which paralleled topics in the faculty questionnaire were the framework for these interviews. Results of the student interviews are reported in percents under two headings, according to whether the student was successful or nonsuccessful in the course using repeatable tests, and in percents of the total student sample.

Student Interviews

	Students with course grade of A N = 10	Students with course grade of C or I N = 10	All students N = 20
	% of group	% of group	% of total
1. How many times could you take a given exam?			
a. 2 tests twice, 1 test unlimited	50	50	50
b. unlimited, within one week	50	50	50
2. What percentage of the time did you take an exam more than once?			
a. 90 to 100%	60	70	65
b. 75 to 89%	0	0	0
c. 50 to 74%	10	10	10
d. 25 to 49%	20	10	15
e. 0 to 24%	10	10	10
f. never	0	0	0
3. What percentage of the time did you take an exam more than twice?			
a. 90 to 100%	0	20	10
b. 75 to 89%	0	0	0
c. 50 to 74%	10	0	5
d. 25 to 49%*	40	50	45
e. 0 to 24%	50	30	40

*In one course surveyed only one test of three could be taken more than twice; students who used this opportunity were rated 33%.

	Students with course grade of A N = 10	Students with course grade of C or I N = 10	All students N = 20
	% of group	% of group	% of total
4. Did you prefer this repeatable testing to standard testing?			
a. yes	100	80	90
b. no	0	10	5
c. no preference	0	10	5
5. How do you feel about the total knowledge gained in this course with repeatable testing?			
a. more than other courses	70	70	70
b. same as other courses	30	20	25
c. less than other courses	0	10	5
6. How accurately do you believe repeatable tests assessed your achievement?			
a. more accurately	70	60	65
b. same or don't know	30	30	30
c. less accurately	0	10	5
7. If you were thinking of taking a particular course and discovered repeatable tests were used in it, how would this influence your decision to take this course?			
a. would take course	80	60	70
b. would not take course	10	20	15
c. decision affected by other factors	10	20	15

Student comments submitted aside from the above questionnaire included:

--Repeatable testing is good in a math course, not necessarily in any other.

--Repeatable testing relieves pressure and anxiety over performance.

--The increased feedback helps the student not to forget the material immediately after the test.

--The tests by themselves didn't enhance learning but the repeatable homework requirement did.

--Repeatable testing helps you teach yourself and understand more.

--The student knows it's his own fault if he doesn't do well.

--It was like choosing your own grade.

Some students disliked:

--content of the test, which did not seem to emphasize understanding;

--extra time taken from the next unit when retaking test on previous unit;

--scope of material encompassed in a test.

Results and Conclusions

The general attitude toward repeatable testing was favorable among both students and faculty who have had experience with it in their classes.

The faculty reported that they believed most students took tests more than once, and some students more than twice. Students reported that they did indeed make use of the repeatable test option.

Both faculty and students felt that repeatable testing was preferred by students to standard testing. Only 60 percent of faculty believed that more capable students preferred repeatable

testing, while 40 percent thought those students preferred the usual methods of testing. All faculty thought less capable students preferred repeatable testing. However, all of the students who received grades of A preferred repeatable testing, as did only 80 percent of the less successful group; the remaining 20 percent of the latter group had no preference or preferred standard testing.

Regarding the knowledge gained by students in a course incorporating repeatable examinations, 80 percent of faculty thought students gained more knowledge, while 20 percent believed knowledge gained to be about equal to that gained in a typical course. Students were only slightly less favorable; 70 percent thought more was gained, 25 percent, about equal knowledge, and 5 percent, less.

Some critics of repeatable testing might question the accuracy of assessment with it; in contrast, faculty and students using repeatable testing were quite confident in this regard. Eighty percent of faculty and 65 percent of students believed the assessment to be more accurate than with typical tests. An additional 30 percent of students believed the assessment to be equally accurate or did not know. Twenty percent of faculty thought repeatable testing to be less accurate (and then only in the long term), and only 5 percent of students held the opinion that repeatable testing was less accurate for assessing their achievements than standard testing.

When faculty were asked which students profited most from the use of repeatable examinations, a variety of opinions were

elicited. Forty percent of faculty believed that students with less than average academic ability benefited the most; and 20 percent thought it was students with poor backgrounds, regardless of ability. Twenty percent of the faculty did not characterize a group, saying that almost all students profited; and 20 percent had no opinion. No faculty named bright students or students with insufficient study time as the group which benefited the most.

Examinations used in repeatable testing were usually made up by a combination of students, the faculty instructor, and other faculty. Limits on the number of times a student could be tested on units of course material and on the time allowed for a student to master a given unit varied among courses; there was no uniform pattern or system of repeatable testing.

Difficulties with management of the repeatable testing operation may be anticipated by faculty who are considering the adoption of repeatable examinations. Forty percent of faculty using the system did indeed report that management of the repeatable testing course was more difficult than usual courses, and only 20 percent thought it was less difficult. However, another 40 percent said that it had been more difficult initially, but had become less difficult. Management or clerical difficulties had not caused anyone to discontinue using repeatable tests.

The only reason given by a faculty member for stopping the use of repeatable examinations was that students collect examination items, which gives them an unfair advantage for later tests.

One professor commented, however, that he made the item pool available to all students before examinations began on a unit.

Comments by students indicated that repeatable testing did relieve pressure and anxiety, and facilitated learning. Experience with repeatable examinations had a generally favorable effect as far as future course selection was concerned; 70 percent of the students said that knowing a particular course incorporated repeatable testing would influence them to take the course. Fifteen percent would not take the course, and the remaining 15 percent said their decision was affected by other factors.

There was not much difference in attitude toward repeatable testing between successful and nonsuccessful students. Less successful students reported taking tests more than twice with greater frequency than successful students. However, although the less successful students used the option more often, they were not unanimous in preferring repeatable examinations, as were the successful students. From the comments and responses to questions it might be inferred that, for a few less successful students, retaking tests on a previous unit conflicted with study on the current unit; this might result in using the retesting option more than other students, although not liking the experience.

The educational purposes of repeatable testing seem to be realized in courses using it. Since both faculty and students who have had actual experience with it prefer repeatable examinations to standard testing, it appears to achieve the purposes of

both groups. Although the initial development of an adequate item pool and management of testing sessions, record keeping, etc., are problems for the initiator of repeatable examinations in a course, they are not insurmountable. To users of this form of achievement monitoring, the results appear to have been worth the investment of time and effort. This should be encouraging to anyone contemplating the introduction of repeatable testing.